

CLAIM AMENDMENTS

1 - 28. (canceled)

1           29. (new) A storage medium for the storage of data, the  
2 storage medium comprising  
3           a glass storage disk having opposite faces;  
4           a reflective coating on one of the faces of the glass  
5 storage disk;  
6           a polymer disk on the reflective coating; and  
7           metallic ions in the glass storage disk or on the other  
8 face thereof, the metallic ions being so constituted that when  
9 irradiated with a focused laser beam these metallic ions are  
10 reduced to metallic particles in the glass storage disk.

1           30. (new) The storage medium for the storage of data  
2 defined in claim 29, further comprising  
3           a doped layer in the glass disk holding the metallic  
4 ions, whereby irradiation by the focused laser beam can convert the  
5 metallic ions of the doping into the metallic particles or  
6 aggregations of the metallic particles in the glass disk.

1                   31. (new) The storage medium for the storage of data  
2 defined in claim 30, wherein the doped layer is generally at the  
3 one face of the glass disk.

1                   32. (new) The storage medium for the storage of data  
2 defined in claim 29, further comprising:  
3                   a layer of donor medium holding the metallic ions on the  
4 other face of the glass disk.

1                   33. (new) The storage medium for the storage of data  
2 defined in claim 29, wherein the metallic ions are of silver, gold,  
3 platinum, or copper.

1                   34. (new) The storage medium for the storage of data  
2 defined in claim 29, wherein the polymer disk is provided with an  
3 optically functional structure for guiding a read/write beam.

1                   35. (new) The storage medium for the storage of data  
2 defined in claim 34, wherein the optically functional structure of  
3 the polymer disk is arranged on a face of the polymer disk turned  
4 toward the glass storage disk.

1           36. (new) A method of storing data on a storage medium,  
2 the method comprising the steps of:  
3           providing a storage medium having  
4           a glass storage disk having opposite faces,  
5           a reflective coating on one of the faces,  
6           a polymer disk on the reflective coating,  
7           metallic ions in or on the glass storage disk; and  
8           writing to the disk by irradiating the glass storage disk  
9 by focused electromagnetic or particle irradiation and thereby  
10 reducing the metallic ions to metallic particles in the glass disk  
11 and defining the data being stored.

1           37. (new) The method defined in claim 36, wherein the  
2 glass disk has a doped layer holding the metallic ions.

1           38. (new) The method defined in claim 37 wherein the  
2 doped layer is formed as a helical track.

1           39. (new) The method defined in claim 37, wherein the  
2 doped layer is at the one face.

1           40. (new) The method defined in claim 37, wherein the  
2 doped layer is formed by locally doping the glass disk in a  
3 temperature range below a transformation temperature of the glass  
4 of which the glass disk is comprised.

1                   41. (new) The method defined in claim 40, further  
2   comprising the step of:  
3                   reducing the metal ions to metallic clusters in the  
4   locally doped areas by heating the glass disk with a second focused  
5   laser beam above the transformation temperature of the glass of  
6   which the glass disk is comprised.

1                   42. (new) The method defined in claim 41, wherein the  
2   first focused laser beam and the second focused laser beam are the  
3   same, and reducing the metal ions to metallic clusters occurs  
4   immediately after locally doping the glass disk.

5                   43. (new) The method defined in claim 36, wherein the  
6   glass disk has on the other of its faces a layer of donor medium  
7   holding the metallic ions, whereby when the donor medium is  
8   irradiated the metallic ions are transferred into the glass disk  
9   and form the particles therein.

1                   44. (new) The method defined in claim 43 wherein the  
2   glass disk is irradiated through the other face.

1                   45. (new) The method defined in claim 36, further  
2 comprising the step of reading the medium by  
3                   irradiating the glass storage disk by electromagnetic or  
4 particle irradiation through the glass storage disk and thereby  
5 reading the data stored in the metallic particles.

1                   46. (new) The method defined in claim 45, wherein the  
2 reading and writing of the medium are done by a laser beam in a  
3 visible spectral region.

1                   47. (new) The method defined in claim 36, wherein the  
2 ions are reduced to metallic particles by resonance-enhanced  
3 absorption of radiation.

1                   48. (new) The method defined in claim 47, wherein the  
2 reduction of metallic ions is effected by heating the entire  
3 storage medium above a transformation temperature of the glass  
4 storage disk.

1                   49. (new) The method defined in claim 36, further  
2 comprising the step of  
3                   deleting stored data by heating the storage medium.

1                   50. (new) The method defined in claim 36, wherein  
2 analog data is stored by varying an intensity of the  
3 focused electromagnetic or particle irradiation.

1                   51. (new) The method defined in claim 36, further  
2 comprising the step of:  
3                   retrieving data from the storage medium by detecting a  
4 phase displacement of a reading laser beam caused by an altered  
5 index of refraction in a locally doped area of the glass disk.

1                   52. (new) A storage medium comprising:  
2 a glass disk having opposite faces;  
3 a protective polymer disk on one of the faces of the  
4 glass disk;  
5 metallic ions in or on the glass disk; and  
6 metallic particles in the glass disk transferred from the  
7 donor medium to the glass disk by a local heating with a focused  
8 laser beam.

1                   53. (new) The storage medium defined in claim 52,  
2 further comprising  
3 a donor medium holding the metallic ions on the other  
4 face of the glass disk.

1                   54. (new) The storage medium defined in claim 52,  
2 further comprising  
3 a doping layer in the glass disk holding the metallic  
4 ions.

1                   55. (new) The storage medium defined in claim 54  
2 wherein the doping layer is at the one face.

1                   56. (new) The storage medium defined in claim 54  
2 wherein the doping layer is formed as a spiral.